

CLAIM AMENDMENTS

1. (CURRENTLY AMENDED) An electroless plating composition comprising an aqueous solution ~~comprising~~ consisting essentially of:

- a) a water soluble, platinum nitrite salt or platinum ammine-nitrite salt;
- b) a water soluble rhodium nitrite salt or rhodium ammine-nitrite salt;
- c) ammonium hydroxide; and
- d) hydrazine hydrate.

2. (Original) The composition of claim 1 wherein the water soluble, platinum nitrite salt or platinum ammine-nitrite salt has the formula $M_z[Pt(NH_3)_x(NO_2)_{(4-x)}](NO_2)_y$ wherein $x=0$ to 4, $y \geq 0$, $z \geq 0$ and M comprises an alkali metal or NH_4^+ cation.

3. (Original) The composition of claim 1 wherein the water soluble, rhodium nitrite salt or rhodium ammine-nitrite salt has the formula $M_z[Rh(NH_3)_x(NO_2)_{(6-x)}](NO_2)_y$ wherein $x=0$ to 6, $y \geq 0$, $z \geq 0$ and M comprises an alkali metal or NH_4^+ cation.

4. (Original) The composition of claim 1 wherein the platinum compound comprises diamminebis(nitrito-N,N)platinum (II).

5. (CURRENTLY AMENDED) ~~The composition of claim 1~~ An electroless plating composition comprising an aqueous solution comprising:

- a) a water soluble, platinum nitrite salt or platinum ammine-nitrite salt;
- b) a water soluble rhodium nitrite salt or rhodium ammine-nitrite salt;
- c) ammonium hydroxide; and
- d) hydrazine hydrate;

wherein the rhodium compound comprises triamminetris(nitrito-N,N,N)rhodium(III).

6. (CURRENTLY AMENDED) ~~The composition of claim 1~~ An electroless plating composition comprising an aqueous solution comprising:

- a) a water soluble, platinum nitrite salt or platinum ammine-nitrite salt;
- b) a water soluble rhodium nitrite salt or rhodium ammine-nitrite salt;
- c) ammonium hydroxide; and
- d) hydrazine hydrate;

wherein the platinum compound comprises diamminebis(nitrito-N,N)platinum (II) and wherein the rhodium compound comprises triamminetris(nitrito-N,N,N)rhodium(III).

7. (Previously Amended) The composition of claim 4 wherein the diamminebis(nitrito-N,N) platinum (II) is present in an amount ranging from about 0.01 to about 450 g/L.
8. (Previously Amended) The composition of claim 5 wherein the triamminetris(nitrito-N,N,N)rhodium(III) is present in an amount ranging from about 0.01 to about 320 g/L.
9. (Original) The composition of claim 1 wherein ammonium hydroxide is present in an amount ranging from about 1 to about 1000 mL/L.
10. (Original) The composition of claim 1 wherein hydrazine hydrate is present in an amount ranging from about 0.01 to about 240 g/L.
11. (PREVIOUSLY & CURRENTLY AMENDED) A process for plating a substrate comprising:
- A) providing a plating composition comprising an aqueous solution ~~comprising~~ consisting essentially of:
- a) a water soluble, platinum nitrite salt or platinum ammine-nitrite salt;
 - b) a water soluble rhodium nitrite salt or rhodium ammine-nitrite salt;
 - c) ammonium hydroxide; and
 - d) hydrazine hydrate; and
- B) contacting a substrate with the plating composition for a sufficient time and under conditions sufficient to plate a metallic platinum-rhodium alloy onto the substrate.

12. (Original) The process of claim 11 wherein the composition is autocatalytic.
13. (Original) The process of claim 11 wherein the substrate is uniformly plated with a metallic platinum-rhodium alloy.
14. (Original) The process of claim 11 wherein the temperature of the composition ranges from about 20°C to about 98°C.
15. (Original) The process of claim 11 wherein the platinum compound is present in an amount ranging from about 0.01 to about 450 g/L.
16. (Original) The process of claim 11 wherein the rhodium compound is present in an amount ranging from about 0.01 to about 320 g/L.
17. (Original) The process of claim 11 wherein ammonium hydroxide is present in an amount ranging from about 1 to about 1000 mL/L.
18. (Original) The process of claim 11 wherein hydrazine hydrate is present in an amount ranging from about 0.01 to about 240 g/L.
19. (Original) The process of claim 11 which is conducted without electrolysis.
20. (Original) The process of claim 11 wherein the substrate comprises a metal.
21. (Original) The process of claim 11 wherein the substrate comprises a non-metal.
22. (Original) The process of claim 11 wherein the substrate comprises a semiconductor.
23. (Previously Amended) The process of claim 11 wherein the substrate comprises a ceramic.

24. (Previously Cancelled)

25. (CURRENTLY AMENDED) A process for plating a substrate comprising:

A) providing a plating composition comprising an aqueous solution ~~comprising~~ consisting essentially of:

- a) a water soluble, platinum nitrite salt or platinum ammine-nitrite salt;
- b) a water soluble rhodium nitrite salt or rhodium ammine-nitrite salt;
- c) ammonium hydroxide; and
- d) hydrazine hydrate; and

B) immersing a substrate into the plating composition for a sufficient time and under conditions sufficient to plate a metallic platinum-rhodium alloy onto the substrate; and

C) removing the substrate from the plating composition.

26. (CURRENTLY AMENDED) An article comprising a substrate immersed in a composition comprising an aqueous solution ~~comprising~~ consisting essentially of:

- a) a water soluble, platinum nitrite salt or platinum ammine-nitrite salt;
- b) a water soluble rhodium nitrite salt or rhodium ammine-nitrite salt;
- c) ammonium hydroxide; and
- d) hydrazine hydrate.